

## NEW SPECIES OF *CAMPONOTUS* (HYMENOPTERA: FORMICIDAE) FROM AUSTRALIA.

by A. J. McARTHUR<sup>1</sup>

### Summary

McARTHUR, A. J. (2003) New species of *Camponotus* (Hymenoptera: Formicidae) from Australia. *Trans. R. Soc. S. Aust.*, 127(1), 5-14, 31 May, 2003.

Seven new species of *Camponotus* are described from Australia viz. *C. fergusoni*, *C. longifacies*, *C. pawseyi*, *C. pitjantjatjarae*, *C. rufula*, *C. scotti* and *C. simpsoni*. They are compared with species that are similar in appearance viz. *C. chalepus* Crawley, *C. sponsorum* Forel, *C. tasmani* Forel, *C. inflatus* Lubbock, *C. lowrei* Forel, *C. harrogi* Forel and *C. lowrei* Forel respectively.

KEY WORDS: Formicidae, Formicinae, ant, *Camponotus*.

### Introduction

The practical identification of Australian ants to sub-families and genera has become possible only recently (Shattuck 1999). The stingless sub family Formicinae contains the genus *Camponotus* and its species are found living in large colonies in most habitats. The taxonomy of *Camponotus* is incomplete; it is perplexing due to its polymorphism i.e. the wide variation in size, shape, pilosity and integument displayed by major and minor workers from the same colony. Ecologists and others using ants as indicators encounter mostly minor workers—the most numerous caste. In this paper emphasis is therefore given to descriptions of minor workers. Several attempts have been made to split *Camponotus* species of the world into small groups to facilitate identification, the most thorough being where about 40 sub-genera or species-groups are listed (Emery 1925). However some of Emery's characters are not readily applicable and many of the old sub-genera in *Camponotus* are untrustworthy (Bolton 1995). It is outside the scope of this paper to assign sub-genera or species-group names here. Three species-groups in *Camponotus* in Australia have recently been published along with descriptions of unique characters with which the three species-groups can be distinguished. These are (i) *C. nigriceps* species-group, distinguished by the anterior margin of the clypeus projecting with a wide median concavity (McArthur & Adams 1996), (ii) *C. macrocephalus* species-group, by its swollen fore femurs and truncated heads (McArthur & Shattuck 2001) and (iii) *C. wiederehri* species-group by J-shaped setae on the underside of the head capsule (Shattuck & McArthur 2002). However, none of the new species described herein nor their relatives

possess characters to place them in any of these three species-groups. Positive identification of the new species should be possible from the diagnoses and descriptions given herein and supported by the characters in Table 1 and Figs 12-18. Distribution maps of the localities of material examined are included.

### Material

#### Collectors of material examined

AJM, A. J. McArthur; AJP, A. J. Pontin; ALY, A. L. Yen; AMM, A. M. & M. J. Douglas; AML, A. M. Leat; ANA, A. N. Andersen; APS, Aldgate Primary School; AWF, A. W. Forbes; BBL, B. B. Lowery; BBS, S. Aust. Dept. for Environment & Heritage, Box & Bulloak Survey; BPI, B. Pike; CE, C. Eckert; CHW, C. H. S. Watts; CP, C. Parker; DG, D. Creevey; DH, D. Hirst; DM, D. Merrill; DMK, D. Mackenzie; DSS, S. Aust. Dept. for Environment & Heritage, Deep Swamp Survey; EGM, E. G. Matthews; EML, S. Aust. Dept. for Environment & Heritage, E. Mt. Lofty Survey; FMR, Friends Mt. Remarkable CP; FRS, S. Aust. Dept. for Environment & Heritage, Flinders Ra. Survey; FSS, S. Aust. Dept. for Environment & Heritage, Fleurieu Swamp Survey; GRC, G. & R. Chureheit; GCM, G. C. Medlin; GFG, G. F. Gross; GFH, G. F. Hill; GHIL, G. H. Love; GK, G. Kluske; GLH, G. L. Howie; GLU, Gluepot Survey; Gw, G. Weber; HAP, H. A. Potter; JEB, J. E. Bromell; JDG, J. & D. Gardner; JAF, J. A. Forrest; JAH, J. A. Herridge; JJM, J. J. McAreavey; JBE, J. Berentson; JC, J. Clark; JDE, J. D. Erskine; JDM, J. D. Majer; JDM, J. Hinkley; JHH, J. J. H. Szent Ivany; JL, J. Landsberg; JMU, J. Mugford; JTH, J. Thurmer; JTO, J. Toma; JWA, J. Wainier; KO, K. Ottewell; KSC, K. Schneider; LJA, L. Jansen; LWA, L. Weatherill; MA, M. Adams; MGE, M. Gemmell; MLU, M. Ludewigs; MTL, S. Aust. Dept. for Environment & Heritage, Mt. Lofty Ra. Survey; MTY,

<sup>1</sup>South Australian Museum, North Terrace, Adelaide, South Australia.

M. Tyler; NSF, N. L. & S. J. Fargher; OPR, Operation Raleigh; PAI, P. Aitken; Pitj, S. Aust. Dept. for Environment and Heritage Pitjantjatara Lands Survey; PJE, P. J. Fargher; PJMG, P. J. M. Greenslade; PLI, P.

Lillywhite; PMA, P. Magarey; RDR, R. D. Robinson; REC, R. E. Clay; RFO, R. Foster; RGS, Royal Geographical Soc. Bookmark Survey; RHA, R. Harvey; RHIM, R. H. Mew; RHU, R. Hutchinson;

TABLE 1. *Morphological characters of the new species. character states are given in Table 2 with relevant structures in Figs 1 & 2. Measurements were taken from type specimens.*

Character	Major workers								Minor workers							
	<i>C. fergusoni</i>	<i>C. longifacies</i>	<i>C. panseyi</i>	<i>C. pilantjatarae</i>	<i>C. tridis</i>	<i>C. scotti</i>	<i>C. fergusoni</i>	<i>C. longifacies</i>	<i>C. fergusoni</i>	<i>C. panseyi</i>	<i>C. pilantjatarae</i>	<i>C. tridis</i>	<i>C. scotti</i>	<i>C. fergusoni</i>	<i>C. longifacies</i>	<i>C. pilantjatarae</i>
head, sides	st	st,tf	x,tf	x,tf	st,tf	st,tf	st	x,tf	st,tf	st,tf	x,tf	x,tf	st,tf	st,tf	st,tf	fx,tf
head, vertex	st	st	st	st	x	st	st	st	x	x	x	x	x	x	x	fx
frontal carinae	w	w	w	w	n	w	w	n	n	w	w	w	w	w	w	w
clypeus, anterior	v	v	v	v	v	v	v	st	x	x	v	v	v	x	x	x
clypeus, pilosity	sp	sp	sp	sp	sp	sp	pl	pl	pl	sp	sp	sp	sp	sp	sp	sp
clypeus, integument	rt	gl,ep	cp	fp	fp	gl,fp	gl	h	gl	h	lp	lp	fp	fp	fp	gl
clypeus, carina	di	ab	di	di	di	in	di	di	ab	in	in	in	di	di	di	di
pronotum, dorsum	x	x	fx	fx,m	st,m	fx	x	st,m	x	st	fx	fx,m	fx	fx	fx	fx
mesonotum	fx	x	fx	x	st	x	fx	fx	fx	x	fx	fx	fx	fx	fx	fx
metanotum	di	w,in	w,in	in	w,di	w,di	in	ab	ab	ab	in	ab	ab	ab	in	in
propodeum, dorsum	st	x	fx	st	st	st	fx	v	v	v	st	fx	st	fx	st	fx
angle, °	135	in	135	135	100	135	135	135	135	150,w	135,di	135	100	135	120	
dorsum/declivity	1.5	in	2	2	<1	2.5	1	3	3	3	2	<1	2.5	1		
node, summit	bt	sh	bt	bt	sh	bt	sh	x	x	x	bt	sh	x	bt		
node, pubescence	pl	sp	pl	pl	ab	sp	sp	pl	pl	pl	pl	ab	sp	ab		
setae, pronotum	10	4	>30	6	4	6	20	10	4	>30	6	4	2	20		
setae, mesonotum	8	4	>30	10	6	6	20	5	2	>30	10	6	2	20		
setae, propodeum	5	10	>30	6	4	6	15	4	10	>30	6	4	6	15		
setae, under head	20	15	>30	0	10	0	15	15	15	>30	0	10	0	0	0	
setae, scape	ad	ad	pl	ad	ad	ad,in	sp	ad	ad,in	45°	ad	ad	ad	ad,in	60°	
setae, mid-tibia	m	ad	pl	ad	ad	ad,di	45°	ad	ad	45°	ad	ad	ad	ad,di	pl	
color, head	rb	rb	re-bk	bk	bk	re-bk	bk	bk	re-bk	bk	bk	bk	bk	re-bk	bk	
color, scape	br	rb	re-bk	br	yb	rb	bk	bk	bk	rb	bk	br	yb	rb	bk	
color, pronotum	br-bk	rb	re-bk	bk	bk	re-bk	bk	bk	re-bk	bk	bk	bk	bk	re-bk	bk	
color, mesonotum	br-bk	rb	re-bk	bk	bk	re-bk	bk	bk	re-bk	bk	bk	bk	bk	re-bk	bk	
color, propodeum	br-bk	rb	re-bk	bk	bk	re-bk	bk	re	rb	bk-re	bk	bk	bk	re-bk	bk	
color, node	rb	rb	re-bk	bk	bk	re-bk	bk	re	br	bk-re	bk	bk	bk	re-bk	bk	
color, gaster	br-bk	rb	re-bk	bk	bk	re-bk	bk	bk	br	bk	bk	bk	bk	re-bk	bk	
color, legs	br	yb	re-bk	br	yb	rb	br	bk	rb	bk	br	yb	rb	rb	rb	
head width mm	2.8	1.7	3.0	2.6	2.2	2.4	1.8	1.2	0.75	1.5	1.9	0.95	1.2	1.2		
head length mm	2.8	1.6	3.0	2.3	2.1	2.3	1.8	1.4	1.0	1.6	1.8	1.1	1.4	1.2		
pronotal width mm	2.0	1.4	2.1	1.8	1.5	1.5	1.25	1.15	0.7	1.3	1.6	0.95	1.0	1.0		

TABLE 2. *States of characters in Table 1.*

ab	absent	di	distinct	n	narrow	st	mostly straight
ad	adpressed	fx	flatly convex	pl	plentiful	tf	tapering to front
bt	blunt	fp	fine, dense punctations	rb	red brown	v	concave
bk	black	gl	glossy	re	red	w	wide
br	brown	h	hidden by pubescence	rt	reticulate	x	convex
er	crenulate	in	indistinct	sh	sharp	yb	yellow brown
cp	coarse punctations	ni	margined	sp	sparse		

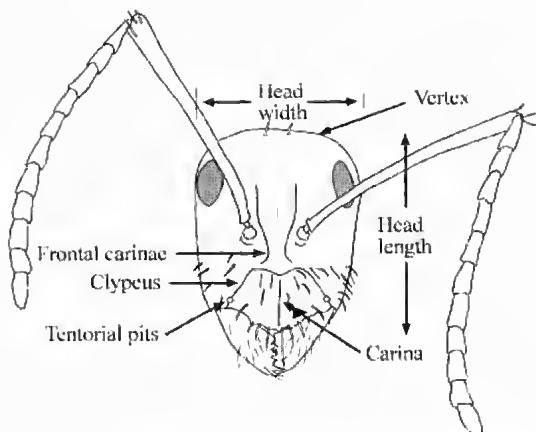


Fig. 1. Head of *C. longifacies* minor worker indicating some of its structure.

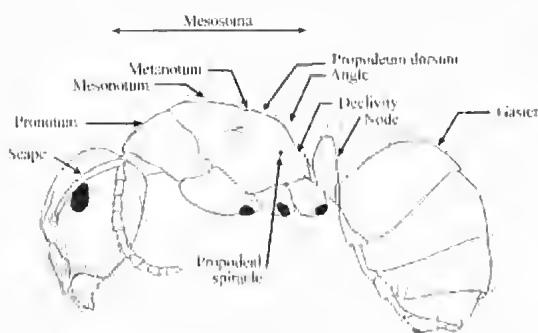


Fig. 2. Side view of *C. fergusoni* major worker indicating some of its structure.

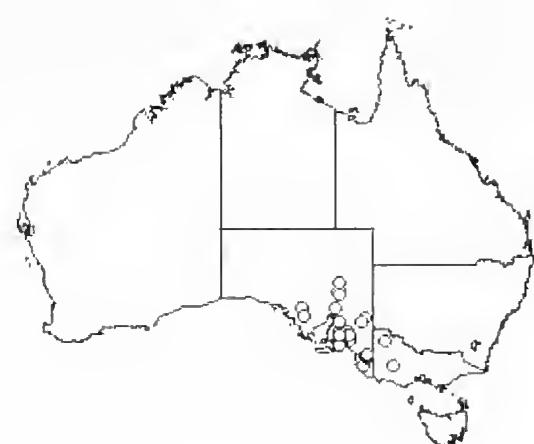


Fig. 3. Localities of *C. fergusoni* material examined.

Riot, Riot South Australian Museum Expn.; RJB, R. J. Bartell; RLE, R. Ley; RRO, R. Robinson; RSB, R. S. Bungey; RVS, R. V. Southcott; RWT, R. W. Taylor; SB, S. Barker; SDS, S. Aust. Dept. for Environment & Heritage, Sandy Desert Survey; SEF, S. Aust. Dept. for Environment & Heritage, S. E. Fauna Survey; SEG, Scientific Exploration Group; SEP, S. Aust. Dept. for Environment & Heritage, S. Eyre Pen. Survey; SHI, S. Hinkley; SML, S. Aust. Dept. for Environment & Heritage, Sth. Mt. Lofty Ra. Survey; SOPS, S. Aust. Dept. for Environment & Heritage, South Olary Plains Survey; SOS, S. O. Shattuck; TG, T Greaves; THA, T Hands; THU, T Herbert; TST, T Steggles; TSW, S. Aust. Dept. for Environment & Heritage, Tilley Swamp Survey; VS, S. Aust. Dept. for Environment & Heritage, Vertebrate Survey; WAM, Western Australian Museum; WMM, W. M. McArthur.

#### Abbreviations of collection locations

ANIC, Australian National Insect Collection, Canberra, Australian Capitol Territory; SAMA, South Australian Museum, Adelaide South Australia.

#### Other abbreviations

CP, Conservation Park; NP, National Park.

#### Genus *Camponotus* Mayr 1861

Characters that enable the new species to be identified are shown in Table 1, states of characters in Table 2, explanation of terms in Figs 1 & 2. Diagnoses and brief descriptions of each species follow.

#### *Camponotus fergusoni* sp. nov.

FIGS 2, 3, 12

#### *Holotype*

One minor worker pinned in SAMA, South Australia, Ferguson CP, 34° 58' S 138° 39' E, 24th Oct. 02, G. Weber.

#### *Paratypes*

South Australia. Wolseley, 0.8 km WSW, 36° 22' S 140° 54' E, 15th Dec. 95, S. Aust. Dept. for Environment & Heritage, Box & Bulloak Survey. One minor worker pinned in SAMA, two minor workers pinned in ANIC.

#### *Other material examined*

Localities are shown in Fig. 3. South Australia: Adelaide, AJM; Adelaide, PMA; Alpana 4 km W FRS; Angaston, JAH; Anstey Hill, CP; Bin Bin, DSS; Bungeroo Ck., JAF; Carisbrook Res., AJM; PJF; Chain Of Ponds, SB; Connurra 4.4 km N. SEP; Coolinda, JMU; Danggali CP, REC; Frances 1 km

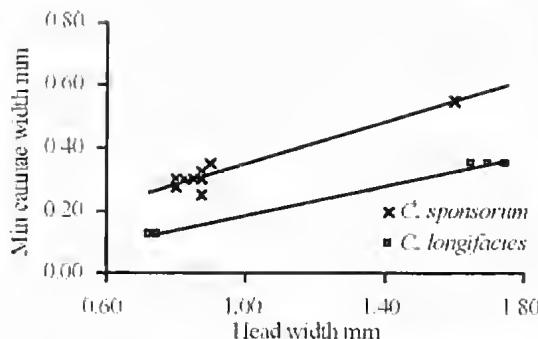


Fig. 4. Graph showing workers of *C. longifacies* have narrower frontal clypeal width than workers of *C. sponsorum*. Definition of terms is given in Fig. 1.

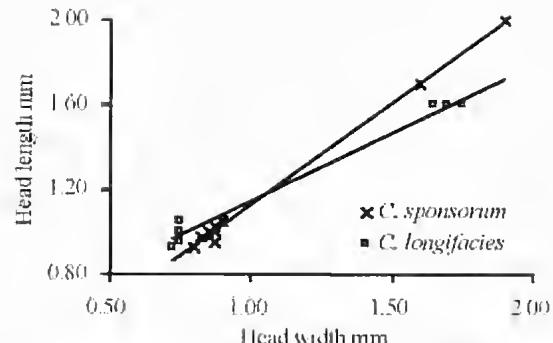


Fig. 5. Graph showing minor workers of *C. longifacies* have longer heads than *C. sponsorum* but the opposite prevails in major workers. Definition of terms is given in Fig. 1.

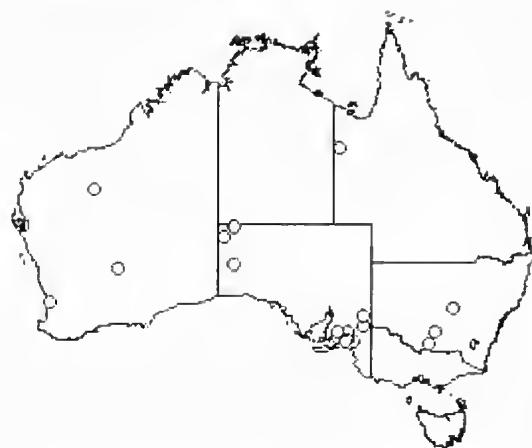


Fig. 6. Localities of *C. longifacies* material examined.

NNE, BBS; Gawler 7 km NbyW, GFG; Gluepot, SEG; Goolwa 1 mi W, RVS; Melrose, DM; Monarto, LJA; Montacute, LJA; Mt. Compass 21 km ESE, FSS; Mundulla 5.6 km SSW, BBS; Murray Bridge, MLU; North Adelaide Parklands, DG; Paney, SEP; Pinkawilllinie CP, JAF; Pooginagorie 3.7 km NE, BBS; Scott Ck., THA; Sevenhill, BBL; Strathalbyn, RRO; Summerfield 2.5 km SW, EML; Teatrick, BBS; Tepko 1.8 km SW, EML; Upper Sturt, JAH; Victor Harbor, SEG; Waite Institute, AJM RSB; Warrnweena 3 km SSW, SEG; Wolseley 2.8 km WSW, BBS. Victoria: Ararat, GFI; Walpeup, ALY.

#### Worker diagnosis

Similar to *C. chaleucus* (Crawley 1915). Minor workers distinguished by a covering of very fine dense white pubescence covering the reticulate integument whereas in *C. chaleucus* pubescence is sparse, integument finely punctate; both mostly

black, mesosoma usually with some red; propodeal dorsum concave.

#### Worker description

Major worker. Head sides straight, weakly tapering to the front, vertex straight; clypeus with a few fine long setae, without pubescence; weakly projecting forward, anterior margin evenly concave; metanotum a distinct furrow; node parallel front and back, summit blunt; propodeal spiracles elongated; mesosoma and node covered with white fine short adpressed pubescence.

Minor worker. Head sides straight, tapering to the front, vertex convex; clypeus anterior margin median section wide, nearly straight, projecting forward, dense pubescence nearly hiding the integument; pronotum, mesonotum and half propodeum form an even convexity; node with a long flatly convex summit. Also see Table 1.

#### Biology

Minor workers observed leaving and returning to nest during the day. The heads of major workers were sometimes observed blocking a nest entrance in heavy soil (G. Weber pers. comm. 2003).

#### Etymology

Named after Ferguson Conservation Park, South Australia.

*Camponotus longifacies* sp. nov.  
FIGS 1, 4, 6, 13

#### Holotype

One minor worker pinned in ANIC, New South Wales, Narrandera 30 mi. W, 34° 45' S 146° 01' E, 29th Aug. 76, B. B. Lowery.

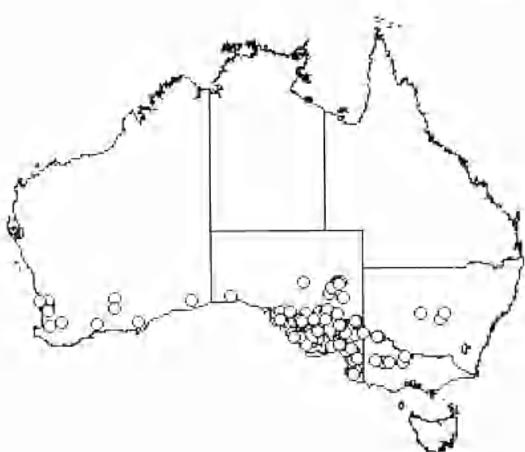


Fig. 7 Localities of *C. pawseyi* material examined.

#### Paratypes

Two minor workers and two major workers pinned in ANIC and SAMA. From same locality.

#### Other material examined

Localities are shown in Fig. 6. New South Wales: Berrigan State Forest, BBL; Condobolin, BBL; Trundle, BBL. Queensland: Mt. Isa 100 km NW BBL. South Australia: Attunga, BBS; Belair, RHM; Cambrai, JTH; Chaunces Line, GFG; Danggali CP, KSC; Illintjita 26 km SSE, Pitj; Mt. Lindsay 0.5 km W, Pitj; Nappyalla 1 km W, RDR; Radium Hill 18.5 km S, PAI; Salisbury, AJM; Tomahawk Dam 3 km N, JAF; Vokes Hill 81 km S, SDS; Western Australia: Byford, BBL; Lake Marmion, JAF; Mt. Whaleback, JDM.

#### Worker diagnosis

One of the smallest *Camponotus*, similar to *C. sponsorum* (Forel 1910). Distinguished by the closely placed frontal carinae shown in Fig. 4 and by the long face in minor workers although interestingly the face of major workers is more square as shown in Fig. 5: clypeus in major workers with deep wide tentorial pits, mid section of clypeus is raised up between tentorial pits into a flattish plain above cheeks bounded by two longitudinal ridges, without carina, clypeus anterior margin has a deep central concavity bounded by two small teeth, whereas in *C. sponsorum* major workers clypeus not raised up, mid section of anterior margin convex with a weak central concavity and distinct carina.

#### Worker description

Major worker. Mesosoma forms an even convexity; propodeum angle indistinct; node summit, pointed in all directions.

Minor worker. Head sides straight tapering to the front; pronotum and mesonotum form an even convexity; node elongate, summit blunt; propodeum angle wide. Also see Table 1.

#### Biology

B. B. Lowery inscribed on label "Nest in sandy soil, pasture and Callitris, neat crater".

#### Etymology

So named because of minor worker's distinctly long face.

#### *Camponotus pawseyi* sp. nov.

FIGS 7, 14

#### Holotype

One minor worker pinned in SAMA. South Australia, Camunda, 37° 39' S 140° 16' E, 18th Jan. 91, C. K. Paysey.

#### Paratypes

Three minor workers and two major workers pinned in SAMA and ANIC. From same locality

#### Other material examined

Localities are shown in Fig. 7. New South Wales: Condobolin, BBL; Matakana 7 miles N, BBL; Trundle, BBL. South Australia: Arkaroola, FRS; Beachport, AJM; Bin Bin 7 km SSE, DSS; Blanchetown, GFG; Bordertown 18 km W, AJM; Burks Is., AJM; Calca, BBL; Calea 5.5 km NNE, SEP; Calperum, GCM; Cambrai, PJMG; Chaunces Line, GFG; Culburra, RVS; Custon 1.2 km SE, BBS; Danggali CP, KSC; Elgin Lane, AJM; Ferries McDonald CP, AJM; Freeling Heights 6.5 km ENE, FRS; Gammon Hill, FRS; Gammon Hill 5.7 SSE, FRS; Gluepot, DMK; Gluepot 14.3 km W, GLU; Gluepot Res., GLU; Goolwa 1 miles W, RVS; Hambidge CP, GFG; Hideaway Hut 10.5 km SW, SOPS; Horn Camp 0.4 km W, FRS; Katchalby WH, SEP; Lake Gilles CP, JAF; Lake Gilles CP, JAF DH; Lake Gilles CP, THA; Loxton, AJM; JDI; Mary Seymour CP, RHM; Mawson Plateau, THA; Melrose, DM; Minnipa 20 miles NW, AJM; Moorundie, GRC; Morgan 8 miles SW, BBL; Mt. Reseve CP, JAF EGM; Munyaroo CP, GFG; Murray Bridge 6 miles W, PAI GFG; Nullarbor Caves, PAI; Nulnugery 7 miles NW; Oodla Wirra, RHM; Pinkawillie CP, JAF DH; Pinkawillie CP, JAF; Pt. Lincoln 13.2 km ESE, GK; Rudall, GFG; Russel Camp, SLE; Sinclair Gap, SB; Telowie 4 km ENE, FRS; Tomahawk Dam 3 km N, JAF; Wolseley 5.2 km ENE, BBS; Worlds End 5 km E, SOPS; Alligator Ck., PJMG; Blinman 10 km NW, PJMG; Cambrai, PJMG; Cummins 4 km S, PJMG; Fairview NP, PJMG; Gambah Park, VS; Innes CP, PJMG; Kadina 10 km S, PJMG; Lance

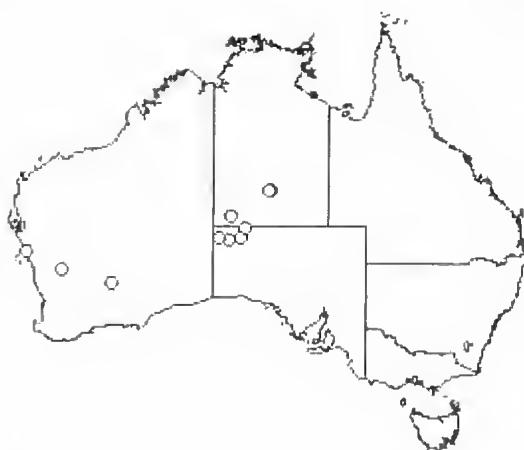


Fig. 8. Localities of *C. pitjantjatarae* material examined.

Bore 3.4 km W, FRS; Mambray Ck., PJMG; Moockra Tower, PJMG; Murray Bridge, PAI; Murray Bridge 15 km NE, MLU; Napperby, PJMG; Poochera, RWT RJB; Pt. Kenny, TG; Pt. Lincoln 3 km E, PJMG; Sandford Dam 2.5 km N, JAF; Teharkuldu Hill 8 miles E, PJMG; Waddikee 6 km E, PJMG; Waikerie, BBL; Warden Hill, FRS; White Dam, AJM MA, Victoria; Bolangum Flora Res., SHI PLI; Dimboola, AJP; Hattah 15 km SSE, ALY; Hattah 19.2 km SW, ALY; Heath, BBL; Millewa South Bore 3.7 miles N, ALY; Mt. Bolangum, SHI; Patho, HAP, Western Australia; Armadale, LWA; Beverley 70 km W, AMM; Bickley, BBL; Boyup Brook, AJM WMM; Cape Arid NP, AJM SB; Darlington, AJM WMM; Kambalda 35 km S, JAF; Lake Leschenaultia, SOS; Madura 41 miles E, FG; Norseman, BBL; Perth, LWA; Ravensthorpe, BBL; Serpentine NP, SOS; Wagin, CHW.

#### Worker diagnosis

Minor worker similar to *C. tasmani* (Forel 1902). Distinguished by its uniformly convex vertex whereas in *C. tasmani* it is straight. In all other respects, similar to *C. tasmani*.

#### Worker description

Major worker. Forehead swollen; anterior head (side view) weakly truncated, elytrus coarsely punctate with a distinct carina, anterior margin median section projects with a central concavity; mandibles striate; propodeum dorsal surface flat; node summit bluntly pointed; whole ant covered with plentiful erect setae; colour variable between black and red.

#### Minor worker

Head sides straight, eyes near corners of head;

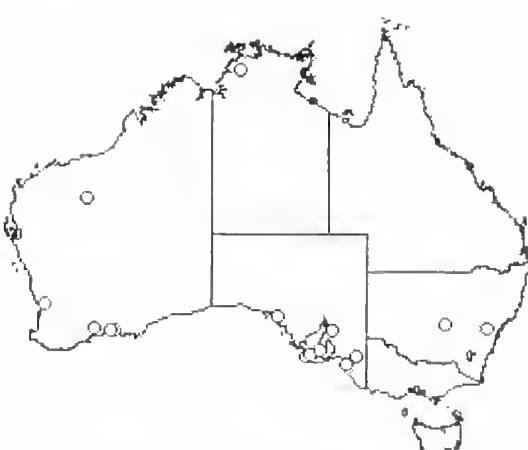


Fig. 9. Localities of *C. rufus* material examined.

elytrus anterior margin projecting convex crenate; 7 or 8 teeth; whole ant covered with plentiful erect setae; pubescence hiding integument; propodeum dorsum deeply concave; node summit convex; colour variable between black and red. Also see Table 1.

#### Biogeography

Nest in ground, AJM has observed major worker's head blocking the entrance, soil excavated from nest never seen near entrance, sometimes upper portion of entrance shaft lined with silk.

#### Etymology

Named after C. K. Pawsey, a naturalist from Millicent, South Australia.

#### *Camponotus pitjantjatarae* sp. nov.

FIGS 8, 15

#### Holotype

One minor worker pinned in SAMA, South Australia, Mt. Lindsay 6.4 km W, 27° 02' S 129° 49' E, 18th Oct. 96, S. Aust. Dept. for Environment & Heritage, Pitjantjatara Lands Survey.

#### Paratypes

One minor worker in SAMA and two minor workers in ANIC pinned. From same locality.

#### Other material examined

Localities are shown in Fig. 8. Northern Territory: Alice Springs 30 km N, BBL; Kunoth Pdk, JWA, Uluru, JWA, South Australia: Maryinna Hill 11.5 km SSE, Pitj; Maryinna Hill 9 km SE, Pitj; Cheeseman Peak 4.7 km NNE, Pitj; Mt. Lindsay 6.4 km W, Pitj; Mt. Woodroofe, Pitj, Western Australia: Mt. Willoughby, JAM; Goldfields Rd., WAM; Mt. Gibson, RLE KO.

#### Worker diagnosis

Similar to *C. inflatus* (Lubbock 1880). Minor workers distinguished by mostly straight sides and vertex of head forming a triangle in front view; absence of erect setae on underside of head whereas *C. inflatus* head sides are convex with plentiful long erect setae on underside of head and elsewhere.

#### Worker description

Major worker head sides mostly convex, clypeus anterior margin projecting, convex with a weak median concavity; node summit blunt; metanotum wide shallow indistinct.

Minor worker. Head triangular, sides straight; node parallel front and back, summit convex; scattered erect setae on front of head, mesosoma, node, gaster, none on scapes and legs; pronotum feebly margined in front; pronotum and mesonotum form a uniform convexity; propodeum dorsum straight. Also see Table 1.

#### Etymology

Named after the Aboriginal inhabitants of the Musgrave Ranges in the north of South Australia where the ant is found.

#### *Camponotus rufus* sp. nov.

FIGS 9, 16

#### Holotype

One minor worker pinned in ANIC, New South Wales, Condobolin, 33° 05' S 147° 09' E, 11th Jan. 67, B. B. Lowery.

#### Paratypes

Two minor workers pinned in ANIC and SAMA. From same locality.

#### Other material examined

Localities are shown in Fig. 9. New South Wales: Bilpin, BBL; Northern Territory: Bullita, OPR; South Australia: Bucks Camp Well, EGM JAF; Clare, JIM; Ravine Des Casoars, PJMG; Safari, TSW; Streaky Bay, JIM; Western R., GFG; Yorke Pen., JJH. Western Australia: Esperance, BBL; Esperance 40 km W, BBL; Mt. Whaleback, JDM; Mundaring Weir, GJL; Ravensthorpe, BBL.

#### Worker diagnosis

Similar to *C. lownei* (Forel 1895). Distinguished by finely and densely punctate integument whereas in *C. lownei* it is mostly finely reticulate; with 5-10 erect setae on underside of the head and propodeum whereas *C. lownei* has > 10. Declining surface of propodeum is longer than the dorsal surface, in both.

#### Worker description

Major worker. Head sides and vertex mostly

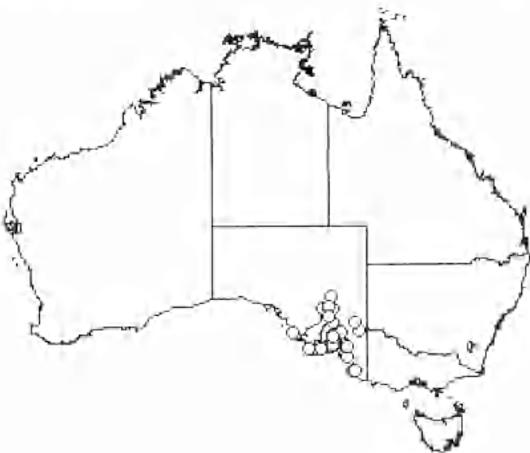


Fig. 10. Localities of *C. scotti* material examined.

straight; clypeus anterior margin median section forming two projecting lobes with a concavity between; metanotum very wide.

Minor worker. Head sides straight and mostly parallel, vertex rounded, eyes placed at posterior third of the head; clypeus with a few long erect setae, sparse pubescence, anterior margin projecting convex; mesosoma dorsum evenly convex, propodeum angle in rear view very narrow. Also see Table 1.

#### Etymology

So named because of the fine dense punctations from Latin *rufus*; rough, unpolished.

#### *Camponotus scotti* sp. nov.

FIGS 10, 17

#### Holotype

One minor worker pinned in SAMA, South Australia, Scott Ck, CP, 35° 04' S 138° 42' E, 12th Dec. 99, T. Hands.

#### Paratypes

Three minor workers pinned in SAMA and ANIC. South Australia, Jupiter Ck, 35° 09' S 138° 46' E, 10th May. 93, A. J. McArthur & S. O. Shattuck.

#### Other material examined

Localities are shown in Fig. 10. South Australia: Woakwine Ra., AJM; Yumali 5 km S, AJM; Adelaide, NBT; Aldgate, BBL; Aldgate, APS; Ashbourne, RRO; Baros Reservoir, MTL; Beachport Jackies Walk, AJM; Belair, AJM; Belair, EGM JAF; Belair, GFG; Blackwood, MTY GFG; Bradbury, JMU; Bridgewater, JEB; Bridgewater, PJMG; Brown Hill Ck., DM; Coorong NP, PJMG; Corflina, AWF;

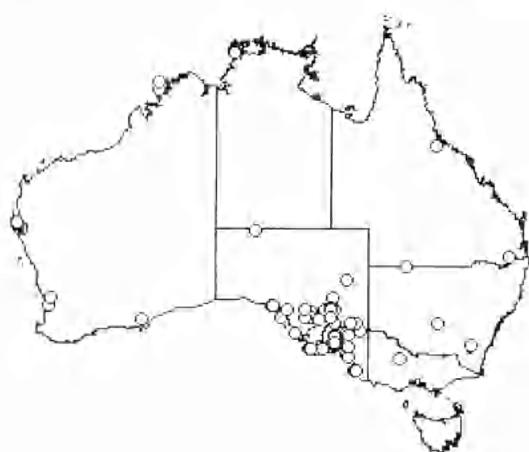


Fig. 11. Localities of *C. simpsoni* material examined.

Crafers, RVS; Echunga, AJM; Ferguson CP, AJM; Ferguson CP, GW; Gawler Heysen Trail, AJM; Gemmells, RRO; Jupiter Ck., AJM SOS; Lirabenda Mylor, AJM PJF; Littlehampton, JTO; Malimong Ickerts Scrub, CE; Mambray Ck., AJM; Marble Ra., GFG; Melrose, AML; Millewa, NSF; Morialta, SML; Mt. Elm 2 km SSW, MTI; Mt. Lofty, AJM PJF; Mt. Lofty, RHA; Mt. Lofty Golf Club, THA; Mt. Remarkable, FMR; Nuriootpa 5 km N, MGL; Orroroo 12 km SSW, PJMG; Parawa, SEG; Pelican Lagoon, DH; Quorn 13 km S, PJMG; Renmark, AJM; Rocky Ri., EGM JAF; Scott Ck., AJM; Sevenhill, BBL; Taylorville, RGS; The Bluff Talyala, GLH; Victor Harbor 6 miles N, BBL; Waite Arboretum, AJM RSB.

#### Worker diagnosis

Slightly similar to *C. hartogi* (Forel 1902) and *C. inexus* (Forel 1902). Distinguished by short white semicircular setae on propodeum dorsum in side view, underside of the head seapes and tibiae lacking erect setae, sparse erect setae on head, mesosoma, node and gaster, front of head finely and shallowly punctate otherwise finely reticulate, frontal carinae wide, propodeum dorsum straight, limbs and scape red brown otherwise colour variable from red to black often in patches, node parallel fore and aft, summit blunt; polymorphic. Also see Table 1.

#### Worker description

Major worker. Metanotum a shallow transverse notch in largest major workers but fading in smaller workers, head wider at the back, vertex straight, anterior clypeal margin weakly projecting with two lobes on either side of a shallow concavity, frontal carinae wide, clypeus coarsely punctate.

Minor worker. Head sides near parallel, vertex convex, anterior clypeal margin projecting evenly convex.

#### Biology

Often found foraging on tree trunks during the day, nest in ground.

#### Etymology

Named after Scott Ck. CP where the ant was first recognised.

#### *Camponotus simpsoni* sp. nov.

FIGS 11, 18

#### Holotype

One minor worker pinned in SAMA, Western Australia, Cape Wellington, 15° 09' S 124° 50' E, 27th Aug. 99, Riot South Australian Museum Expedition.

#### Paratypes

Three minor workers pinned in SAMA and ANIC, From same locality.

#### Other material examined

Localities are shown in Fig. 11. Australian Capital Territory: Black Mountain, BBL; New South Wales: West Wyalong 23 miles W, BBL; Northern Territory: Darwin, SOS; Queensland: Mingela, BBL; Warwick 30 km S, PJMG; Waverley, ANA JL; South Australia: Lake Gilles CP 32.56S 136.46E, JAF DH; Breakneck Ri., PJMG; Calpatanna WIL, JAI; Cambrai 25 km E, JGD; Cambrai 32.2 km E, TST; Ceduna, JAF; Ceduna 20 km E, JAF; Doullass Scrub, JAF EGM; Freeling Heights 2.8 km NNE, FRS; Gluepot, GLU; Kurralingas, THU; Lake Gilles CP, RLE; Mt. Remarkable NP, FRS; Munyaroo CP, JBE; Musgrave Ra., PJF; Pinkawillimie CP, JAF; Poochera, RFO BPI; Poochera 11 km E, RJB; Rocky Ri., PJMG; Tandanya, FRI; Telowie CP, FRS; Victoria: Inglewood, JHI; Western Australia: Armadale, LWA; Cape Arid NP, AJM SB; Coronation Is., Riot; Faure Is., JAF; Mundaring Weir, JC.

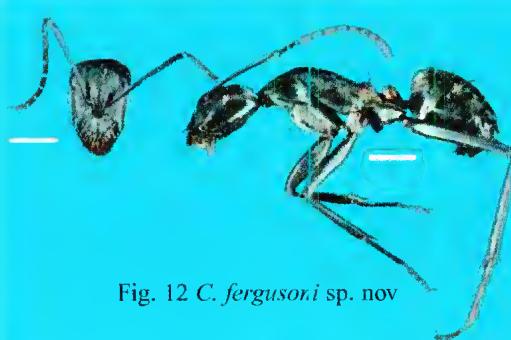
#### Worker diagnosis

Similar to *C. lowrei* (Forel 1902). Distinguished by the absence of long erect setae on the underside of the head; reduced numbers of long erect setae on all other parts. In both, propodeum declining surface longer than the dorsal surface; integument mostly finely reticulate; black, legs lighter.

#### Worker description

Major worker. Head sides mostly straight and parallel; clypeus anterior margin projects forward, median section deeply concave, bounded by two teeth.

Minor worker. Head sides straight, tapering to the front, vertex convex, eyes close to corners; clypeus wide, frontal margin uniformly convex, projecting

Fig. 12 *C. fergusoni* sp. novFig. 13 *C. longifacies* sp. novFig. 14 *C. pawseyi* sp. novFig. 15 *C. pitjantjatarae* sp. novFig. 16 *C. rufidus* sp. novFig. 17 *C. scotti* sp. novFig. 18 *C. simpsoni* sp. nov

Scale lines = 1 mm

forward; node high, short longitudinally, summit blunt; mesosoma dorsal surface forming an even convexity. Also see Table 1.

#### Biology

Nest in ground.

#### Etymology

Named after Antony Simpson a benefactor of the South Australian Museum.

#### Acknowledgements

This work has been made possible by grants from Australian Biological Resources Study, the support of the South Australian Museum and CSIRO Entomology. The South Australian Department for Environment and Heritage Biodiversity and Monitoring Section provided many of the specimens for study. Special thanks are due to S. O. Shattuck, J. A. Forrest OAM, and E. G. Matthews and to Annette Vincent for the drawings.

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